

Bald Eagles: numbers comparable to past ten years

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What is happening?

During the winter season, bald eagle (*Haliaeetus leucocephalus*) populations in Átl'ka7tsem/Txwnéwu7ts/Howe Sound are diligently observed and recorded by citizen scientists. Counts from three citizen science groups in the Skwxwú-7mesh/Squamish, Brackendale, and lower Átl'ka7tsem/Txwnéwu7ts/Howe Sound areas were reported on previously (see [Eagles](#), Ocean Watch Howe Sound Edition [OWHS] 2017). Depending on the group, the counts have been running anywhere from 15 years to almost four decades and are ongoing today. Counts are conducted in winter (i.e., December or January) around salmon spawning rivers in order to count bald eagles attracted to the salmon carcasses that result from spawning.



Bald Eagle. (Credit: Aroha Miller)

In recognition of the Sound as an important habitat not only for bald eagles but for several migratory bird species as well, the English Bay/Burrard Inlet Important Bird Area (IBA) was extended in January of 2019 to include an area of Átl'ka7tsem/Txwnéwu7ts/Howe Sound. This extension expands as far north as the

southern half of Lhaxwm/Anvil Island, down the east side of Chá7elkwnech/Gambier Island, and encompasses Nexwílélexwem/Bowen Island and the Pasley Islands (see [Marine Birds](#), OWHS 2020). However, this IBA does not afford any legal protection.¹

What is the current status?

During the 2016 to 2019 counts, the number of eagles observed by each citizen science group remained comparable to the previous 10 years (from 2008/09 counts on), with the exception of 2013/14, when markedly more eagles were observed (Figure 1). In each of the three most recent years, fewer than 1500 bald eagles were counted by each individual group. The total number of eagles observed in the three survey areas combined over this period was 1346, 1797 and 2032, respectively, a small increase year after year.

However, there is considerable variation in the number of eagles counted over the years. Therefore, we cannot say that this small year-over-year increase indicates

an upward trend in eagle numbers. The number of bald eagles observed in the Lower Howe Sound Christmas Bird Count continues to be low (less than 150 birds per year). For this group, no data for December 2018 was available online at the time of writing (October 2019).

Counts can be affected by weather (e.g., snowy or windy conditions in which eagles seek shelter) and human factors (e.g., number of participants). Despite these uncertainties, the consistent collection of data is valuable, providing important information for understanding winter foraging behaviour of bald eagles and their contributions to the ecological system in Átl'ka7tsem/Txwnéwu7ts/Howe Sound.

BALD EAGLE COUNTS IN THE ÁTL'KA7TSEM / TXWNEWU7TS / HOWE SOUND AREA

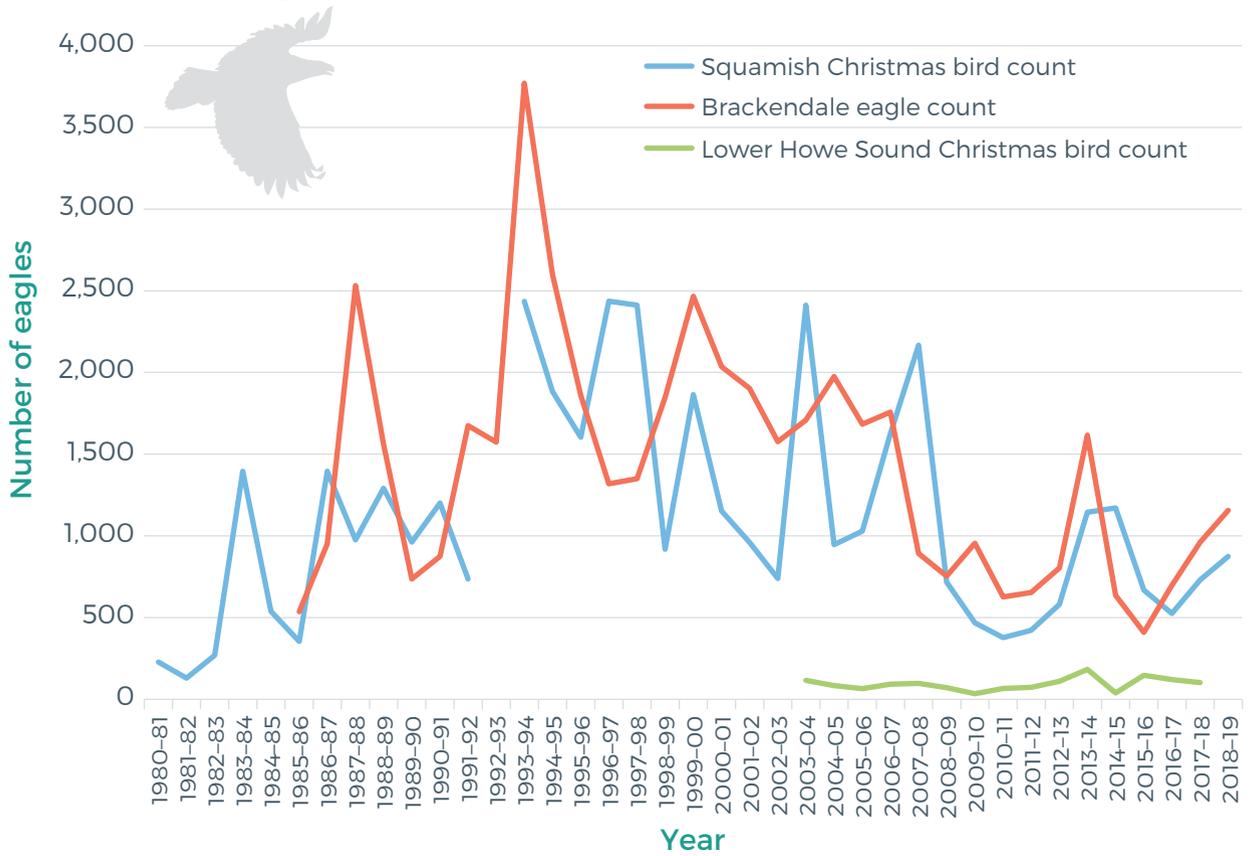
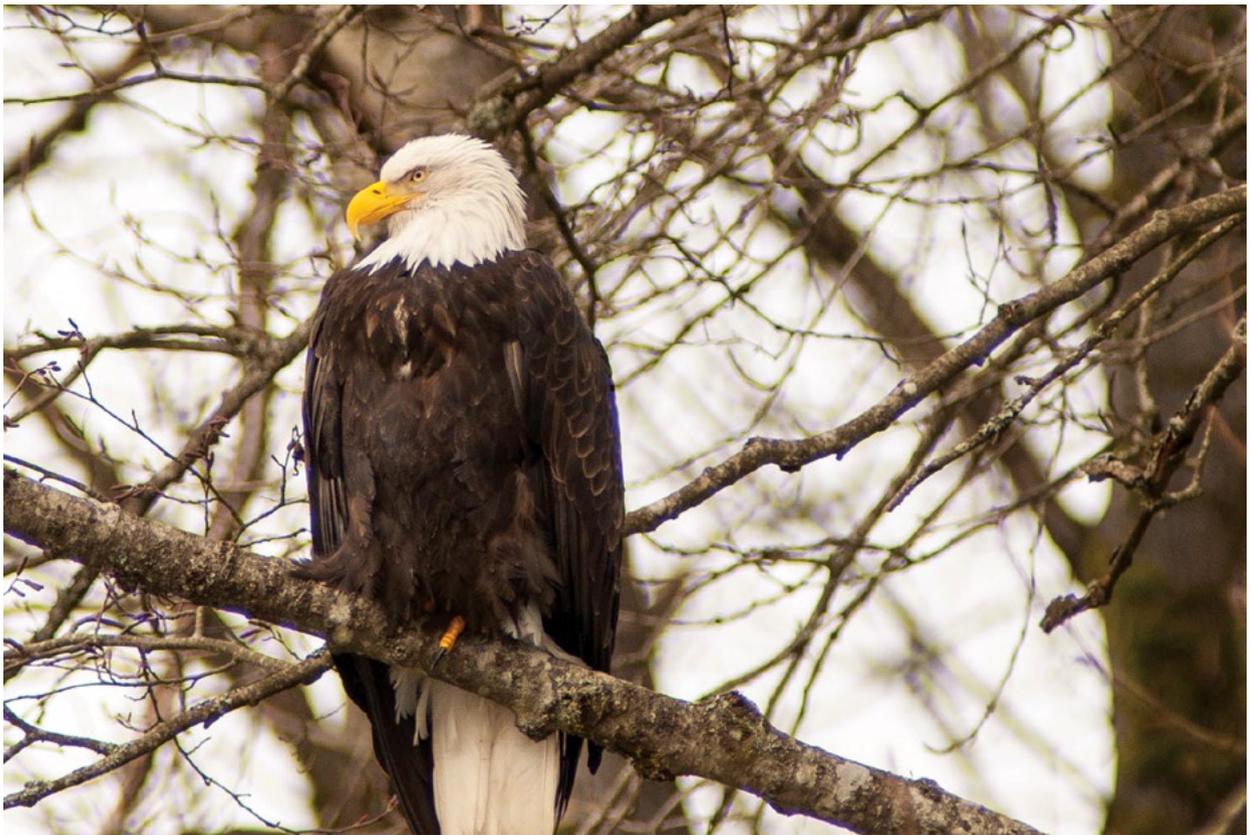


Figure 1. Bald eagle counts by each of three citizen science groups in Átl'ka7tsem/Txwnéwu7ts/Howe Sound from the early 1980s to 2019 for the Squamish Christmas and Brackendale eagle counts; and from 2002 to 2018 for the Lower Howe Sound group.

How will climate change impact bald eagles?

The predicted increase in storm frequency and intensity will result in more flooding events that remove salmon carcasses from rivers. Numbers of salmon in rivers will be affected by other factors that influence salmon survival and reproduction, such as stream flow and warmer water temperatures (see [Stream](#)

[Flow](#), OWHS 2017). Consequently, eagles will search elsewhere for salmon or look for other food sources. Movement to follow food sources will likely result in fewer eagles observed at historic winter-feeding sites, a reason given for the record low bird count in January of 2016 (411 eagles) (See [Eagles](#), OWHS 2017).



A bald eagle. (Credit: Rich Duncan)

What has been done since 2017?

The table below reports on progress made on recommended actions from the previous 2017 article, where identified. Many of these require ongoing action.

2017 ACTION	ACTION TAKEN
INDIVIDUAL AND ORGANIZATION ACTIONS	
Use proper viewing ethics when watching eagles. Do not disturb eagles feeding or roosting.	Supported by Eagle Watch resources, volunteers and signage. https://www.squamishenvironment.ca/programs/eaglewatch/
GOVERNMENT ACTIONS AND POLICY	
Empower local stewardship by increasing public bald eagle education efforts and education of regulations of the <i>B.C. Wildlife Act</i> , and locations of eagle nests and Important Bird Areas. Increase enforcement of activities restricted in the <i>B.C. Wildlife Act</i> .	Eagle Watch acknowledges the support of the District of Squamish. https://www.squamishenvironment.ca/programs/eaglewatch/
Closely monitor and manage prey species populations, specifically to ensure adequate chum runs are available to support eagle populations.	Fisheries and Oceans Canada (DFO) supports the Tenderfoot Creek Hatchery long-term chum stocking program, which began in 2012. In efforts to protect chum, DFO closed this recreational fishery in Átl'ka7tsem/Txwnéwu7ts/Howe Sound in November 2019 (see Salmon , OWHS 2020).
Legally recognize and strictly regulate IBAs as Protected Areas, especially in IBAs that do not have established legal protection (e.g., National and Provincial Parks). Where this is not feasible, consider conservation easements and agreements, private land stewardship, and land acquisition to ensure protection.	Approximately 50% of IBAs do not overlap with protected areas (e.g., National Parks). ¹ In European countries, IBAs offer legal protection. ¹
Legislate against the production and use of harmful chemicals (e.g., Persistent Organic Pollutants [POPs]).	Canada was the first country to sign and ratify the Stockholm Convention, which aims to protect against health and environmental impacts from POPs. Details and links to Canada's work in this area can be found online at: https://www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/persistent-organic-pollutants-stockholm-convention.html

What can you do?

A detailed overview of recommended actions relating to climate change is included in *The path to zero carbon municipalities* (OWHS 2020). In some cases, no progress was identified on previous recommended actions; these remain listed below.



Individual and Organization Actions:

- Learn more about eagles by watching live streaming web cams of eagle nests (see Resources) or by attending Eagle Watch at Brackendale during the winter.
- Use proper viewing ethics when watching eagles. Do not disturb eagles feeding or roosting.
- Know the rules that protect eagles. It is an offense to possess, take, injure, molest, or destroy a bird or its eggs. Eagle nests are protected year-round, whether or not the nest is in use, by the B.C. Wildlife Act. Develop with Care.
- Adopt the best practices guidelines for protecting eagle nests during development that include identification of eagle nests before development and the establishment of a vegetated no-disturbance buffer zone around the nest tree.



Bald eagle. (Credit: Rich Duncan)

Methods

Bald eagle data were accessed from citizen science sites. Skw̓wú7mesh/Squamish bird counts for 2016 to 2018 were accessed online from the Audubon database by filtering for year, location specifics (i.e., Canada, B.C.) and the codes (BCSQ for Skw̓wú7mesh/Squamish and BCHS for Lower Howe Sound.² No data for the Lower Howe Sound bird count was available for January 2019. The early January Brackendale eagle count was accessed from the Squamish Environment Society's (SES) website.³

Counts are conducted in a single day. The area covered in bird counts was described previously for Squamish/

Skw̓wú7mesh and Brackendale (see [Eagles](#), OWHS 2017) as well as Lower Howe Sound (see [Marine Birds](#), OWHS 2017). Advice on etiquette is available from the Eagle Watch Program, run by the SES. Binoculars or telephoto lenses are advised to support viewing.⁴ Christmas Bird Counts are organized events and participation requires coordination with the count compiler.⁵ Audubon has a published compiler manual to support consistent counts.⁶ To create a reliable survey, the Brackendale count also requires trained volunteers.⁷

References

¹ Bird Studies Canada. Are IBAs Protected? [Internet]. [cited 2019 Oct 31]. Available from: <https://www.ibacanada.ca/protection.jsp?lang=EN>

² National Audobon Society. Christmas Bird count [Internet]. [cited 2019 Sep 9]. Available from: <https://netapp.audubon.org/CBCObservation/CurrentYear/ResultsByCount.aspx>

³ Squamish Environment Society. Eagle counts by year by area. Avail [Internet]. [cited 2019 Aug 7]. Available from: www.squamishenvironment.ca/programs/winter-eagle-count/eagle-counts-by-year-by-area/

⁴ Squamish Environment Society. Eagle Watch [Internet]. [cited 2019 Oct 30]. Available from: http://cloud.squamishenvironment.ca:1080/products/files/doceditor.aspx?fileid=2006&doc=MjB4Qlk2WVpBV3RXaFNPTTVLRUpHTWInYmZmWE8vdS9meIjBWOThGTmhtUTo_IjIwMDYiO

⁵ National Audobon Society. Join the Christmas bird count [Internet]. [cited 2019 Oct 3]. Available from: www.audubon.org/conservation/join-christmas-bird-count

⁶ Bird Studies Canada. BC Coastal Waterbird Survey Protocol [Internet]. 2018 [cited 2019 Oct 30]. Available from: <https://www.birdscanada.org/volunteer/bccws/Resources/BCCWSProtocolNov2018.pdf>

⁷ Squamish Environmental Society. Update: 33rd annual winter bird count: January 6 [Internet]. [cited 2019 Oct 3]. Available from: <https://www.squamishenvironment.ca/brackendale-annual-eagle-count-33-january-6-2019/> 3 Oct 2019

⁸ Fact Sheet #10 Bald Eagles and Ospreys. Environmental Guidelines for Urban and Rural Land Development in British Columbia. Accessed July 20, 2016. <https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/develop-with-care/fact-sheet-10-eagles-osprey.pdf>.

⁹ Province of British Columbia. 2013. Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia (2013). Including Appendix B: Raptor Webcam Guidelines: An Addendum to Best Management Practices for Raptor Conservation during Urban and Rural Land Development in British Columbia. Accessed July 20, 2016. http://www.env.gov.bc.ca/wld/documents/bmp/raptor_conservation_guidelines_2013.pdf.